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COMPLETE SPECIFICATION.

An Improved Process of Manufacturing Kumyss Compounds or Kumyss Tablets.

I, JOHN CARNRICK of 447 Greenwich Street, New York City, in the County and State of New York, United States of America, Manufacturing Chemist, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement :—

This invention relates to the manufacture of a concentrated,—preferably dry,—kumyss compound, adapted for the quick and convenient preparation of the effervescent liquid beverage known as kumyss.

The object of the invention is to manufacture a uniform and stable kumyss compound containing peptonized milk and possessing all the nutritive constituents in the proper proportions, of the best kumyss, and adapted (by its dry condition) to be kept any desired length of time and conveniently transported without undergoing fermentation or other deteriorating change, and capable of being quickly converted into a nutritious, easily digested and assimilable effervescent food beverage, containing a much larger proportion of soluble casein than is contained in ordinary kumyss.

Kumyss as ordinarily prepared is difficult and expensive to handle and transport in consequence of loss from breakage of the bottles and on account of its becoming spoiled in a short time and unfit for use. It cannot be kept even for a few days in proper condition without being packed in ice. Patients complain that the kumyss is never alike,—being one day mildly acid, the next day very acid, and the third day very much like vinegar, and thus frequently unfit for use.

By my invention these difficulties are overcome, and a concentrated, uniform, and stable kumyss compound is presented which possesses good keeping qualities and can be conveniently used by the patient or other person while travelling on the cars or steamers, or while in the country away from the usual sources of bottled kumyss. By the use of my dry kumyss compound, the degree of acidity and the percentage of alcohol and carbonic acid developed in the prepared beverage can be perpectly regulated at will and a nutritious beverage of uniform quality readily obtained.

My kumyss compound is preferably first prepared in the form of a dry powder and then compressed into tablets, in which form it keeps better and is more convenient for use.

My concentrated dry kumyss is prepared as follows: A suitable quantity of sweet milk is first taken and most of its fat removed in any well known manner, after which it is placed in a digesting pan and heated to about 125° F. and subjected to the action of a digestive ferment, preferably pancreatine, during gentle stirring or agitation for about one-half hour, or until about 30 °/₀ of the casein is digested and rendered soluble while the remaining casein is changed to a non-coagulable and easily digestible condition. After the desired percentage of casein has been digested the peptonized milk is then sterilized by heating to a temperature of about 190° F. and sufficiently high to destroy the digestive power of pancreatine. While the partially digested or peptonized milk is still hot it is transferred to a vacuum pan where there is added to it a sufficient quantity of cocoa butter to largely replace the natural milk fat which has been previously removed; there is also added milk sugar and cane sugar in such quantities that the proportion of the former shall equal about 20 °/₀ and the latter about 10 °/₀ of the finished dry product, and the batch is then evaporated to a dry condition. The dried milk after

removal from the vacuum pan is ground to a fine powder and is then ready for mixture with other ingredients to form my kumyss compound as follows: To the powdered peptonized milk, containing the added milk-sugar and cane-sugar, as described, I add bicarbonate of soda and preferably citric acid sufficient to render it effervescent and also lactic acid or a small percentage of a suitable ferment to produce a further fermentation when desired. Though I preferably use bicarbonate of soda my invention is not confined thereto, and I propose to use any suitable alkaline carbonate, and instead of citric acid I may use some other suitable acid. After the ingredients have been well mixed in the dry condition, the mixture is compressed into tablets of a suitable size for convenient use. I preferably make the tablets of such a size that twelve (12) of them answer for the preparation of twelve (12) fluid ounces of kumyss, or one tablet for each fluid ounce of water.

When ready to be used for the preparation of the kumyss beverage about one ounce and a half of my dry kumyss compound is added to twelve (12) ounces of water in a bottle, the liquid to rise within about an inch of the top, after which the bottle is tightly stoppered and laid on its side. The bottle may be shaken occasionally until the tablets have dissolved and at about the end of twenty minutes it may be put on ice or in a refrigerator and cooled to the desired temperature. The liquid kumyss thus prepared is free from curds or lumps, is white and opaque, and when opened effervesces freely, forming an agreeable, nutritious food beverage adapted for the use of invalids and convalescents, and other persons where a healthful, nutritious, and quickly assimilated food is required.

In case a larger amount of alcohol, lactic acid, and carbonic acid is desired, than can be obtained by simply dissolving the kumyss tablets in water in stoppered bottle for about a half hour, this bottled kumyss is then kept at about the ordinary house temperature for from two to four days when a further fermentation will develop an increased amount of alcohol, lactic acid, and carbonic acid, and will also increase the solubility and digestibility of the casein.

The dry compressed tablets are preferably put up for the trade in bottles or air tight cans. The dry kumyss compound may also be put up for the trade in powdered or granulated form.

The ingredients and proportions herein mentioned, may be varied as shall appear desirable, without departing from my invention. The essential claim which I make is the preparation of an artificial product to take the place of ordinary kumyss.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1.—The process of manufacturing a dry kumyss compound which consists in removing a portion of the fat from milk, then subjecting the milk at a suitable temperature (about 125° F.) to the action of a digestive ferment to digest a part of the casein, sterilizing by properly increasing the temperature,—adding cocoa butter and sugar, evaporating to dryness and reducing to a powder, then mixing therewith a small percentage of a suitable ferment.

2.—The process of manufacturing a dry kumyss compound or tablet which consists in subjecting milk after a portion of the fat has been removed, at a temperature of about 125° F., to the action of a digestive ferment to digest part of the casein,—sterilizing by heating to the proper temperature,—adding cocoa butter and sugar, evaporating to dryness and reducing to a powder, then mixing therewith suitable proportions of alkaline carbonate, acid and ferment, and then compressing into tablets or other forms.

3.—As an article of manufacture a concentrated dry kumyss compound adapted to be mixed with water to form an effervescent kumyss beverage.

4.—As an article of manufacture a dry kumyss compound containing powdered milk, and a ferment adapted to be mixed with water and fermented to form an effervescent kumyss beverage.

5.—A kumyss compound containing powdered peptonized milk, an alkaline carbonate, and an acid adapted to be mixed with water to form an effervescent kumyss beverage.

Dated this 7th day of December 1891.

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